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10/005,936	12/03/2001	Jinsaku Masuyama	016295.0733 (DC-03225)	7808

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EXAMINER
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CHEN, TSE W

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/005,936

Applicant(s)

MASUYAMA ET AL.

Examiner

Tse Chen

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a startup time for a first server module based on the unique address for the first server module and a multiplication factor associated with a duration of an inrush load of at least one of the server modules” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2116

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, U.S.

Publication 2002/0198608, in view of Ando, Japanese Publication 2000-102166.

4. In re claim 1, Smith discloses a computer system [fig.2; multiple processor combination 100] comprising:

- A power supply [inherently to supply operational voltage] [0025].
- At least two server modules [server blades 102-1 and 102-n; fig.2].
- A midplane [pci bus 110] operable to receive the at least two server modules and to provide a unique address for each server module [0025-0026].
- An address module [system server blade 102-0] operable to obtain the unique addresses from the midplane for at least one of the server modules [0029; determines unique address of each server module based on GA pins].

5. Smith did not discuss details of power management for the system.

6. Ando discloses a computer system [electronic equipment] comprising:

- A start-up time [e.g.,  $\Delta T$ ; time shifted] for a first server module [103; card analogous to server for processing communication signals] based on the unique address [e.g., slot address 502] for the first server module and a multiplication factor [time constant] associated with a duration of an inrush load of at least one of the server modules [abstract, solution; 0018, 0022, 0029, 0033, 0035].
- Wherein the system is operable to couple the power supply [via 406, 407] to the first server module based on the start-up time [0030-31].

Art Unit: 2116

7. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the computer system comprising an address module operable to obtain the unique addresses from the midplane and to calculate a start-up time for a first server module based on the unique address for the first server module and a multiplication factor associated with a duration of an inrush load of at least one of the server modules. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

8. As to claim 2, Smith discloses, wherein the server modules comprise blade servers [incorporate multiple 102 blade servers as one server module as it is well known in the art to incorporate a plurality of servers into one module].

9. As to claim 3, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

10. As to claim 4, Smith discloses, wherein the midplane comprises a circuit board including two or more connectors [multiple compact pci connectors for multiple modules] coupled to the midplane and two or more resistors [some kind of resistors for the multiple GA pin is needed or a short may occur] coupled to the midplane [0025]. Regarding the resistors, the Examiner has taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of

Art Unit: 2116

information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

11. As to claim 5, Smith discloses, wherein the connectors [multiple compact pci connectors for multiple modules] are operable to provide an interface between the server modules and the midplane [0025-26].

12. As to claim 6, Smith discloses, wherein each connector [compact pci connector 112] is operable to interface with one server module [fig. 1; 0025].

13. As to claim 7, Smith discloses, wherein the midplane provides a unique address to each server module through resistor strapping the one or more resistors [0025].

14. As to claim 8, Ando discloses, wherein the midplane is further operable to provide an interface [301] between the server modules and the power supply [0024].

15. As to claims 9, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g.,  $\Delta T$ ] for each server module [0022].

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claim 1 above, and further in view of Butka et al., U.S. Patent 6735704, hereinafter Butka.

17. Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss a management controller to provide redundant operation.

18. Butka discloses a system [10; fig. 1] comprising a management controller [master controller 20] associated with the midplane [bus 22], the management controller operable to provide sequence redundancy by sequencing power to the server modules if the midplane experiences a failure [col. 4, ll. 8-51; col. 5, l. 34 – col. 6, l. 62].

Art Unit: 2116

19. It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the redundancy teachings of Butka, in order to permit the system to continue normal operations in the event of a failure [Butka: col. 1, ll.20-42]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to permit the system to continue normal operations in the event of a failure.

20. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claim 1 above, and further in view of Fung, US Publication 20050177755.

21. Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not disclose explicitly a timer.

22. Fung discloses a computer system [fig.1] comprising at least one module [e.g., management module] associated with at least two server modules, the module operable to perform power management functions [i.e., calculate start-up time] for each server module [0024; 0027], wherein each address module includes a timer [376], the address module further operable to set the timer with the start-up time and the timer operable to count to [down from] the start-up time [0037]. Regarding the timer that is operable to count down from the start-up time, the Examiner had taken Official Notice that it is prior art to configure a timer to either count down or count to a known time for timing a duration. One of ordinary skill in the art would have been motivated to make such a combination in order to count towards a known time.

23. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith, Fung and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the teachings of Fung, as timers are very well known in the art and suitable for use in the system of Smith and Ando. One of ordinary skill in the art would

Art Unit: 2116

have been motivated to make such a combination as it provides a very well known way to provide timing of events [configurable counts more flexible and accurate than analog] and maintain performance while reducing power consumption in a server farm via global power management [Fung: 0008-11].

24. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claim 1 above, and further in view of Duley, U.S. Patent 6766222.

25. In re claim 12, Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss details of the switches associated with the server modules.

26. Duley discloses a system [power sequencing system] comprising a switch associated with each server modules [slave] and the at least one address module [master], the switch operable to accept a command from the address modules to switch between an on position and an off position [col.6, ll.18-39; col.6, l.50 – col.7, l.49].

27. It would have been obvious to one of ordinary skill in the art, having the teachings of Duley, Smith, and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the switches of Duley, in order to provide cost savings in power supplies [Duley: col.7, l.50 – col.8, l.4]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to provide cost savings in power supplies.

28. As to claim 13, Ando discloses, wherein at the expiration of the start-up time a module switches a selected switch [407] to the on position allowing an associated server module [card] to receive power from the power supply [0030].



Art Unit: 2116

29. Claims 14-16, 18-23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, in view of Fung, US Publication 20050177755, and Ando, Japanese Publication 2000-102166.

30. In re claims 14 and 23, Smith discloses a computer system [fig.2; multiple processor combination 100] and associated method comprising:

- At least two server modules [server blades 102-1 and 102-n; fig.2].
- A midplane [pci bus 110] associated with the at least two server modules, the midplane operable to receive the at least two server modules and to provide a unique address for each server module based on the location of each server module on the midplane [0025-0026].
- Wherein the midplane comprises a circuit board including two or more connectors [multiple compact pci connectors for multiple modules] coupled to the midplane and two or more resistors [some kind of resistors for the multiple GA pin is needed or a short may occur] coupled to the midplane [0025]. Regarding the resistors, the Examiner had taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.
- Wherein each connector [compact pci connector 112] is operable to interface with one server module [fig.1; 0025].
- At least one address module [system server blade 102-0] associated with the at least two server modules, the address module operable to obtain the unique address from the

Art Unit: 2116

midplane for each server module [0029; determines unique address of each server module based on GA pins].

31. Smith did not discuss details of power management for the system.

32. Fung discloses a computer system [fig.1] comprising at least one module [e.g., management module] associated with at least two server modules, the module operable to perform power management functions [i.e., calculate start-up time] for each server module [0024; 0027]; one of more chassis [enclosure] operable to house the server modules, the midplane, and the power supply [0150].

33. Fung did not discuss the details of starting up [i.e., a component of power management functions] the server modules.

34. Ando discloses a computer system [electronic equipment] comprising:

- A start-up time [e.g., deltaT; time shifted] for a server module [103; card analogous to server for processing communication signals] based on the unique address [e.g., slot address 502] for the server module and an inrush load requirement [e.g., startup set longer than the lasting time of the inrush current] of the server module [abstract, solution; 0022; 0029, 0033].
- At least one power supply [102] associated with the midplane [101], the power supply operable to supply power to start up the modules, the power supply operable to sequence power to start up the server modules based on the start-up times [timing for supplying power to each module is shifted] for each of the server modules [abstract; 0001; 0022; 0027; 0039-41].

35. It would have been obvious to one of ordinary skill in the art, having the teachings of Smith, Fung and Ando before him at the time the invention was made, to modify the system

Art Unit: 2116

taught by Smith to include the teachings of Fung and Ando, in order to obtain the claimed system. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to maintain performance while reducing power consumption in a server farm via global power management [Fung: 0008-11], taking into consideration the importance of managing the initial inrush current at startup to limit the power supply means [Ando: abstract].

36. As to claim 15, Smith discloses, wherein the server modules comprise blade servers [incorporate multiple 102 blade servers as one server module as it is well known in the art to incorporate a plurality of servers into one module].

37. As to claim 16, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

38. As to claim 18, Fung discloses, wherein each address module includes a timer [376], the address module further operable to set the timer with the start-up time and the timer operable to count to [down from] the start-up time [0037]; and Ando discloses, on the expiration of the start-up time, switching a switch [407] to an on position that allows the server module to receive power from a power supply [0030]. Regarding the timer that is operable to count down from the start-up time, the Examiner had taken Official Notice that it is prior art to configure a timer to either count down or count to a known time for timing a duration. One of ordinary skill in the art would have been motivated to make such a combination in order to count towards a known time.

39. As to claim 19, Smith discloses, wherein the midplane comprises a circuit board including two or more connectors [multiple compact pci connectors for multiple modules]

Art Unit: 2116

coupled to the midplane and two or more resistors [some kind of resistors for the multiple GA pin is needed or a short may occur] coupled to the midplane [0025]. Regarding the resistors, the Examiner had taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

40. As to claim 20, Smith discloses, wherein the midplane provides a unique address to each server module through resistor strapping the one or more resistors [0025].

41. As to claims 21 and 22, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g., deltaT] for each server module [0022].

42. As to claim 25, the Examiner had taken Official Notice that it is prior art for one or more cabinets to house one or more of the chassis.

43. Claims 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, Fung, and Ando as applied to claim 14 above, and further in view of Butka.

44. In re claim 17, Smith, Fung, and Ando disclose each and every limitation of the claim as discussed above. Smith, Fung, and Ando did not disclose explicitly a multiplication factor.

45. Butka discloses a method wherein calculating the start-up time [delay seconds] comprises:

- Obtaining a multiplication factor [power subsystem number-1] for each server module [power nodes] and calculating the start-up time using the multiplication factor [col.4, ll.8-39].

46. It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith, Fung, and Ando before him at the time the invention was made, to modify the

Art Unit: 2116

system taught by Smith, Fung, and Ando to include the multiplication factor teachings of Butka, in order to avoid simultaneous power supplies [Butka: col.1, ll.8-39]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to avoid simultaneous power supplies.

47. In re claim 24, Smith, Fung, and Ando disclose each and every limitation of the claim as discussed above. Smith, Fung, and Ando did not discuss a management controller to provide redundant operation.

48. Butka discloses a system [10; fig.1] comprising a management controller [master controller 20] associated with the midplane [bus 22], the management controller operable to provide sequence redundancy by sequencing power to the server modules if the midplane experiences a failure [col.4, ll.8-51; col.5, l.34 – col.6, l.62].

49. It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith, Fung, and Ando before him at the time the invention was made, to modify the system taught by Smith, Fung, and Ando to include the redundancy teachings of Butka, in order to permit the system to continue normal operations in the event of a failure [Butka: col.1, ll.20-42]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to permit the system to continue normal operations in the event of a failure.

#### ***Response to Arguments***

50. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

51. Applicant's arguments with respect to claims 14 and 23 have been fully considered but they are not persuasive. Applicant argues that "there is no motivation to combine or modify the references to arrive at the claimed combinations... Smith is entirely unconcerned with providing

Art Unit: 2116

facilities to resolve problems associated with satisfying multiple inrush load requirements without over-provisioning the power supply”. Examiner strongly disagrees and submits that reducing power consumption and managing the initial inrush current at startup to limit the power supply means are most relevant to the systems described by the references. Examiner does not understand why one with ordinary skill in the art would not be concerned with resolving problems associated with satisfying multiple inrush load requirements without over-provisioning the power supply, as a safe/effective power management system is desirable.

52. As such, Applicant’s arguments are deemed not persuasive and the rejections are respectfully maintained.

#### *Conclusion*

53. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

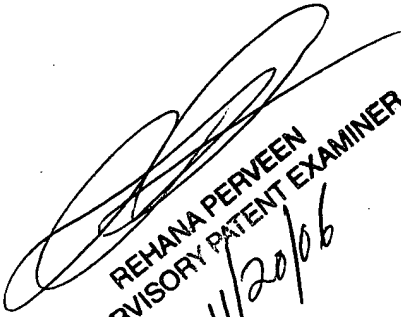
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

Art Unit: 2116

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tse Chen  
November 16, 2006

  
REHANA PERVEEN  
SUPERVISORY PATENT EXAMINER  
11/20/06